ABSTRACT

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Title of diploma thesis: CHANGES OF LIPID SPECTRUM DURING BODY MASS REDUCTION IN PATIENTS WITH DIABETES MELLITUS

The thesis deals with the determination of lipid parameters (plasma total fatty acids, plasma total cholesterol, lipoprotein cholesterol, plasma triglycerides, plasma cholesterol precursors (lathosterol and squalene) and markers of cholesterol absorption (β-sitosterol and campesterol)) in obese patiens with diabetes mellitus type 1 and type 2 who were tested with a seven-day fasting, followed by low-calorie diabetic diet. It is assumed that weight loss should improve insulin resistence. The aim of this work is to evaluate the lipid parameters during the body weight reduction in obese patients suffering with diabetes mellitus.

Lipids were determined before and after a seven-day fasting and after one month from the beginning of fasting (in patiens with diabetes mellitus type 1 also after one year). Gas chromatography was used for the determination of fatty acids and non-cholesterol sterols and squalene. Cholesterol and triglycerides were determined by a routine enzymatic colorimetric test.

In patients with diabetes mellitus type 1 significant changes in the levels of fatty acids were found and decreased levels of lathosterol and campesterol as well decrease in their ratio with total cholesterol were observed after the fasting period. In patients with diabetes mellitus type 2 an increased ratio of lathosterol/total cholesterol after one month from fasting was found. Equally, for both diabetic groups a significant decrease in high density lipoprotein cholesterol (HDL-C) levels after fasting was determined.